

Applicant: Gross et al.
Application No.: 10/018,398
Examiner: Z. Fay

Remarks

Claims 16, 21, and 22 are presented for the Examiner's review and consideration. Claim 16 has been amended. Applicants believe the claim amendment and the accompanying remarks herein serve to clarify the present invention and are independent of patentability. No new matter has been added.

35 U.S.C. §103 Rejection

Claims 16, 21, and 22 were rejected under 35 U.S.C. §103(b) as being unpatentable over U.S. Patent No. 6,040,485 to Lattes et al. ("Lattes").

The Examiner recognizes that Lattes does not teach an oligometric compound, but asserts it would have been obvious to use the teachings of Lattes "considering that the number carbons and F of such patent read on an oligomeric perfluoro carbon compound." For the reasons set forth below, Applicants respectfully disagree and submit that this rejection should be withdrawn.

To establish a *prima facie* case of obviousness, three basic criteria must be met. MPEP 2143. First, there must be some suggestion or motivation, either in the reference itself or in the knowledge generally available to one of ordinary skill in the art, to modify the reference. Second, there must be a reasonable expectation of success. Finally, the prior art reference must teach or suggest all the claim limitations.

"In determining the propriety of the Patent Office case for obviousness in the first instance, it is necessary to ascertain whether or not the reference teachings would appear to be sufficient for one of ordinary skill in the relevant art having the reference before him to make the proposed substitution, combination, or other modification." *In re Linter*, 458 F.2d 1013, 1016, 173 USPQ 560, 562 (CCPA 1972). MPEP 2143.01. Obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either explicitly or implicitly in the references themselves or in the knowledge generally available to one of ordinary skill in the art. Id.

As an initial matter, Applicants are unaware of any authority to suggest that an oligomer as claimed is *prima facie* unpatentable over a monomeric compound, such as those of Lattes.

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Lattes discloses monomeric compounds which can be used for ophthalmological applications. The compounds are disclosed as having only one fluorinated chain per molecule. The compounds are designed with the benefit of higher synthesis yields, allowing a reduction in the preparation costs thereof in marked proportions. There is no explicit or implicit teaching in Lattes that the compounds are oligomeric compounds. Nor is there any teaching or suggestion in Lattes that an oligomeric compound would provide the same benefits as the Lattes monomeric compounds.

Furthermore, Lattes provides exemplary methods of making compounds, which are limited only to methods of making the monomeric R_F-R_H compound. There is no explicit or implicit teaching in Lattes that the exemplary methods can be used to make oligomeric compounds or how the exemplary methods can be used to make such. Nor is there any teaching or suggestion that the any oligomeric compounds made from the exemplary methods would have the same benefits as the monomeric compounds made from the methods of Lattes. Thus, Lattes is unable to enable a person of ordinary skill in the art to make the compounds of the present invention.

In contrast, the present invention is directed to the utilization of a highly fluorinated oligomeric alkane in ophthalmology. ([0001]). The idea underlying the invention and forming a part of the invention lies in the fact that the injurious effect of fluorocarbons when used in the eye for long periods of time is essentially caused by their ability to penetrate tissue and by the interaction of their viscosities and high densities. ([0006]). This idea led to the search for substances with higher viscosity with sufficiently high density and sufficient dissolving power and at the same time only minimum tissue penetration. ([0007]). The substances in accordance with the invention, because of their particular molecular form, and in spite of their similar chemical composition to the known R_F-R_H compounds, are not tissue-penetrating and thus suitable for long-term use in the eye, since it was recognized that the tissue-damaging properties of the known substances are due to their high penetration. ([0009]).

One further advantage of the oligomers as claimed in the present invention is that the oligomers are less reactive compounds. The compounds disclosed in Lattes comprise a central double-bond in the molecule susceptible to reactions such as addition reactions or elimination

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reactions. Such higher reactivity of the compounds disclosed in Lattes, when compared to the oligomers in the present invention (owing to their chemical inertness and stability), may be one reason why the oligomers of the present invention are superior for use in long-term treatment. Thus, Applicants respectfully submit that there are unexpected and unobvious results obtained by the claimed invention.

Additionally, the claimed invention has non-obvious structural differences from what is disclosed in Lattes. The oligomeric compounds exemplified in the present application have a molecular weight of more than 1000, which is twice as much than the compounds in the examples of Lattes. As a result, the physical chemical properties of these high molecular weight oligomers differ from those disclosed in Lattes. Lattes discloses compounds that comprise one fluorinated chain per molecule, whereas the compounds of the present invention have at least two fluorinated chains per oligomeric molecule. This clear structural difference gives rise to differences in physical and chemical behavior, and the skilled artisan is well aware of the fact that such structural differences would likely have a significant impact on the physical chemical properties of the compounds.

In essence, it would clearly involve improper hindsight to arrive at the invention of the present claims from the teachings (or suggestions) of Lattes and much more than simply counting the number of carbon and fluorine atoms per molecule. In fact, the present invention relates to the use of a completely different type of fluorinated compounds, characterized by structural differences and molecular parameters, when compared with Lattes.

In light of the foregoing, independent claim 16 is respectfully submitted to be patentable over Lattes. As claims 21 and 22 depend from claim 16, these dependent claims necessarily include all the elements of their base claim. Accordingly, Applicants respectfully submit that the dependent claims are allowable over Lattes at least for the same reasons.

35 U.S.C. §112 Rejection

Claims 16, 21, and 22 were rejected under the second paragraph of 35 U.S.C. §112 as being indefinite. In response, Applicants have amended claim 16 as suggested by the Examiner.

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Conclusion

In light of the foregoing remarks, this application is now in condition for allowance and early passage of this case to issue is respectfully requested. If any questions remain regarding this amendment or the application in general, a telephone call to the undersigned would be appreciated since this should expedite the prosecution of the application for all concerned.

No fee is believed to be due. However, please charge any required fee (or credit any overpayments of fees) to the Deposit Account of the undersigned, Account No. 500601 (Docket No. 754-X01-002).

Respectfully submitted,



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